

the label.

We believe that heat units provide greater accuracy in determining proper application date and require much less effort than field observation of bloom occurrence.

We did find a yield increase in 50% of the fields receiving Pix when the compound was applied at an average of 8 to 20 white blooms per 25 feet of rows. This coincides with a heat unit range of 1200-2000.

In the other 50% of the fields there was either no change in yield or a yield decrease.

We determined the success rate was similar when applications were made at an average bloom count of 8 or at an average of 20 blooms. These values correspond to about 1400 and 1800 heat units, respectively.

Thus, it appeared that heat units would be a more reliable method than bloom counts to determine application timing.

Also, our data supports our belief that we do not fully understand the response of cotton to Pix and thus, we feel a more in depth evaluation must be done before Pix can be universally used as a management tool.

#### The Effect of Pix<sup>®</sup> Applications on Cotton Treated with Four Levels of Nitrogen

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During 1980 we monitored petiole nitrate levels of five varieties of cotton treated with Pix. Our data suggested that Pix treated plots maintained higher petiole nitrate levels during each of the four weeks the nitrate level was monitored. The level was an average of 10% greater in the Pix treated plots at each sampling date. These results suggested that the successful use of Pix may depend on the relative availability of nitrogen and the nitrogen status of the plant.

In 1981 we applied 20 grams of Pix per acre to cotton fertilized with four nitrogen levels. The test was conducted at two locations in cooperation with cotton farmers and agricultural industry representatives. The tests were six rows wide and replicated four or eight times. The fertilizer rates selected included 100, 200, 300 and 400 pounds nitrogen per acre.

Each field received 100 pounds of nitrogen preplant and the remainder in two or three applications side dressed at two week intervals preceding the Pix application. The Pix application was timed to approximate 5 or 40 white blooms per 25 feet of row. Twenty-five to thirty petioles were collected from each plot the day the Pix was applied and one, three and five weeks later.

The initial petiole nitrate level averaged 15,000 and 18,500 for the two tests, respectively. Five weeks later, approximately August 1, the petiole level had decreased to an average of 5,000 and 11,000 for the two tests, respectively. No differences in nitrate nitrogen petiole levels were observed on a sampling date (Table 1).

The petiole nitrate level from the plots receiving the lowest rate of nitrogen per acre were as high as plots receiving the highest rate of nitrogen per acre. Data we collected do not explain this result. Yield differences were not observed between nitrogen treatments, yields were greater in seven of eight plots receiving an application of Pix (Table 2).

Table 1. Petiole nitrate levels of cotton treated with four nitrogen rates.

Site 1 N lb/A	Weeks Following Pix Application							
	0	1		3		5		
	20g	Ck	20gm	Ck	20gm	Ck		
100	15,000	10,150	11,100	6,400	6,750	4,700	4,200	
200	15,000	10,650	10,650	7,050	7,150	5,100	4,200	
300	15,000	10,300	11,250	7,400	8,250	5,400	3,900	
400	15,000	11,500	11,250	9,300	8,650	5,900	4,700	
Site 2								
87	18,725	14,850	15,350	13,550	13,050	11,050	12,800	
187	18,400	15,050	16,000	13,150	13,600	11,300	10,050	
287	19,000	15,900	18,700	13,800	13,700	11,200	11,300	
387	18,050	17,750	16,450	14,300	14,050	11,400	11,450	

Table 2. Yield of cotton treated with four levels of nitrogen and two levels of Pix during 1981.

Site 1 Rate of Pix	Nitrogen lb/ac				
	100	200	300	400	Av
	-----lint lb/ac-----				
20g	2,104	1,920	2,059	2,052	2,034
Ck	2,021	2,004	2,026	1,812	1,966
Site 2					
	Nitrogen lb/ac				
	.87	187	287	387	
	-----lint lb/ac-----				
20g	1,898	1,993	1,730	1,864	1,868
Ck	1,813	1,943	1,708	1,859	1,831

Effect of Pix<sup>TM</sup> on Three Cotton Varieties  
Planted in 30- and 40-inch Rows

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Three cotton varieties, Deltapine 70, 7209, and 7209-107, were planted in both 30- and 40-inch rows in a replicated experiment at the Cotton Research Center, Phoenix, in 1981. The plots were hand thinned to a uniform stand of 30,000 plants per acre on both row widths. On June 19, when plants were 20 to 24 inches tall with blooms on approximately half the plants, Pix was sprayed on one half of each plot at the rate of one pint per acre. The plants in this field remained rather short throughout the season never exceeding a height of 3 feet. There were no measurable differences in height between the Pix treated and untreated plots.

One row (43 feet long) of each plot was harvested by hand at two-week intervals starting on August 17. Yields shown in the tables below were calculated from the hand harvested plots.

At the first picking, August 17, the only significant variable was a row width by Pix interaction. The interaction was due to higher yield on 30-inch rows for Pix treated plots but a lower yield on 40-inch rows. This interaction persisted through the fourth harvest date. There were significant differences among the three varieties at four harvest dates also. However, at the final harvest on October 26, the varietal differences and the Pix-row width interaction had disappeared.